

10/572,419

CLAIMS What is claimed:



1-48. (CANCELED)

49. (CURRENTLY AMENDED) A method for automatically inserting at least one small item, to be transmitted via a mailing service, into an envelope via a device comprising:

a storage bin for storing envelopes;

an envelope feeding mechanism for successively feeding individual envelopes from the storage bin to a control drum with a periphery of the control drum having at least a vacuum portion, with the control drum being rotatably driven;

an item feeding mechanism for sequentially moving at least one item, to be inserted, toward an envelope being conveyed from the storage bin toward an introduction zone by the vacuum portion of the control drum with a closing flap of the envelope being maintained in an opened position to facilitate insertion of at least one item into the envelope; and

an item inserting mechanism for inserting at least one of the items into the envelope being conveyed by the control drum, and the item inserting mechanism comprising at least one guide, located adjacent the control drum and in the introduction zone, for guiding the at least one item into the opened envelope, and at least one scraper located adjacent an exterior surface of said control drum, for facilitating detachment of the envelope from the vacuum portion of the control drum; and

a discharge mechanism for removing the envelope from the introduction zone once the at least one item is inserted into the envelope conveyed by the control drum, said method comprising the steps of:

storing the envelopes such that the closing flap of each individual envelope is in a folded closed position with the closing flap ~~being located on a bottom~~ directly abutting a back surface of the envelope and adjacent the control drum,

unfolding said closing flap in the direction of the envelope opening by generating at least one stream of air supplied by a rotary cam which conveys the closing flap from its initial folded closed position into the opened position,

moving said closing flap into contact with an exterior surface of the control drum,

drawing said closing flap against said exterior surface of the control drum by suction via the vacuum portion of the control drum,

detaching the envelope from the control drum, following partial rotation of the control drum, by the at least one scraper,

further opening the envelope to facilitate insertion of the at least one item,

introducing the at least one item into said opened envelope, and discharging the envelope (15) once the at least one item is inserted into the envelope (15).

50. (PREVIOUSLY PRESENTED) The method according to claim 49 further comprising the step of opening each envelope by opening guides which are inserted into the envelope to open further the envelope and facilitate insertion of the at least one item therein.

51. (PREVIOUSLY PRESENTED) The method according to claim 50 further comprising the step of compressing said enveloped laterally during the insertion of the opening guides to facilitate insertion of the at least one item therein.

52. (CANCELED)

53. (PREVIOUSLY PRESENTED) The device according to claim 65, wherein said control drum (13, 53) comprises on at least a portion of its periphery a covering (17, 57) having a high coefficient of friction.

54. (PREVIOUSLY PRESENTED) The device according to claim 53, wherein said peripheral covering (17, 57) on said control drum (13, 53) extends over an angular section comprising between 25% and 75% of the periphery.

55. (PREVIOUSLY PRESENTED) The device according to claim 53, wherein said peripheral covering (17, 57) on said control drum comprises several parallel bands (18, 58) extending over an angular section comprising at least between 25% to 75% of the periphery.

56. (PREVIOUSLY PRESENTED) The device according to claim 65, wherein said rotary cam (14, 54) is driven synchronously with said control drum.

57. (PREVIOUSLY PRESENTED) The device according to claim 66, wherein said rotary cam (14, 54) is provided with at least one projection (22, 62) for initiating the unfolding of the closing flap of each individual envelope.

58. (PREVIOUSLY PRESENTED) The device according to claim 66, wherein the control drum (13, 53) and the rotary cam (14, 54) have the same diameter and are driven synchronously at the same speed and along one portion of their circular trajectory, said rotary cam (14, 54) contacts with the peripheral surface of said control drum (23, 53) to drive the bottom most envelope from said storage means (12, 52) towards said introduction zone.

59. (PREVIOUSLY PRESENTED) The device according to claim 65, wherein the device comprises several scrapers (25, 65) arranged in parallel to one another, and said scrapers are located between the parallel bands (18, 58) of said peripheral covering (17, 67) on said control drum.

60. (PREVIOUSLY PRESENTED) The device according to claim 65, wherein the device comprises lateral deflectors (36) for pushing together the lateral edges of said individual envelopes and assist in opening of the envelope.

61. (PREVIOUSLY PRESENTED) The device according to claim 60, wherein said lateral deflectors (36) comprise guide rollers.

62. (PREVIOUSLY PRESENTED) The device according to claim 60, wherein said lateral deflectors (36) comprise guide profiles.

63. (PREVIOUSLY PRESENTED) The device according to claim 65, wherein said control drum (53) comprises at least two cylindrical segments (80) separated by at least one unattached ring (81).

64. (PREVIOUSLY PRESENTED) The device according to claim 63, wherein said unattached ring (81) is formed of a roller.

65. (CURRENTLY AMENDED) A device for automatically inserting at least one small item, to be transmitted via a mailing service, into an envelope via the device, the device comprising:

a storage bin (12, 52) for storing envelopes such that a closing flap of each envelope is folded over into a closed position in which an inner surface of the

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closing flap directly faces a rear surface of the envelope and an outer surface of the ←
closing flap faces a bottom of the storage bin;

a control drum (13) being driven so as to rotate and a periphery of the control drum (13) having at least a vacuum portion and a roller portion;

a rotary cam (14) for successively unfolding the closing flap of a bottom most envelope, being fed from the storage bin to the control drum (13), with the rotary cam supplying a stream of air to unfold the closing flap, of the bottom most envelope being fed, from its initial closed position into the opened position while the vacuum portion of the control drum draws the envelope being fed against an outer surface of the control drum (13);

an item feeding mechanism for sequentially feeding at least one item, to be inserted, toward an envelope (15) being conveyed, by the rotation control drum, from the storage bin toward an introduction zone by the vacuum portion of the control drum (13) with a closing flap of the envelope (15) being maintained in the opened position to facilitate insertion of at least one item into the envelope (15); and

an item inserting mechanism for inserting at least one of the items into the envelope (15) being conveyed by the control drum (13), and the item inserting mechanism comprising at least one guide (29), located adjacent the control drum (13) and in the introduction zone, for guiding the at least one item into the opened envelope (15), and at least one scraper (25) located adjacent an exterior surface of said control drum (13), for facilitating detachment of the envelope (15) from the vacuum portion of the control drum (13); and

a discharge mechanism for removing the envelope (15), once at least one item is inserted into the envelope (15) conveyed by the control drum (13).

66 (CURRENTLY AMENDED) A device (10, 50) for automatically inserting at least one item into an envelope which is to be transmitted via a mailing service, the device comprising:

a storage bin (12, 52) for storing envelopes such that a closing flap of each envelope is folded over into a closed position in which an inner surface of the closing ←
flap directly faces and communicates with a rear surface of the envelope and an outer ←
surface of the closing flap faces a bottom of the storage bin; ←

a rotary cam (14) for successively feeding a bottom most envelope (15) from the storage bin to a control drum (13) with a periphery of the control drum having both a vacuum portion and a roller portion and the control drum being driven, the rotary cam (14) successively unfolding the closing flap of the bottom most envelope, being fed from the storage bin to the control drum (13), with the rotary cam supplying a stream of air to unfold the closing flap, of the bottom most envelope being fed, from its initial closed position into the opened position while the vacuum portion of the control drum draws the envelope being fed against an outer surface of the control drum (13);

an item feeding mechanism for sequentially feeding at least one item, to be inserted, toward an envelope being conveyed by the vacuum portion of the control drum from the storage bin toward the item feeding mechanism with a closing flap, of the envelope being conveyed by the control drum, being maintained in an opened position, by vacuum, to facilitate insertion of at least one item into the envelope being conveyed by the control drum at an introduction zone; and

an item inserting mechanism for inserting at least one of the items into the envelope being conveyed by the control drum, and the item inserting mechanism comprising at least one guide (29), at least partially located in the introduction zone adjacent the control drum, for guiding the at least one item into the opened envelope, and at least one scraper (25) located tangentially relative to an exterior surface of said control drum, for facilitating detachment of the envelope from the control drum; and

a discharge mechanism, cooperating with the roller portion of the control drum, for discharging the envelope, once at least one item is inserted into the envelope conveyed by the control drum, in a discharge direction away from the at least one guide.